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Government of Northern Rhodesia.

MEDICAL REPORT

ON

Health and Sanitary Conditions for the Year 1937.

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NORTHERN RHODESIA

Medical Report on Health and Sanitary Conditions for the Year, 1937.

SECTION I.

ADMINISTRATION.

(*a*) Staff.

EUROPEAN :

The authorised establishment is given in Table I at the end of this Report. The chief changes during the year were as follows :

Promotions :

Dr. J. A. Acheson, Medical Officer, to be Senior Medical Officer from the 1st January, 1937.

Appointments :

Medical Officers :

Dr. R. H. Purnell, M.R.C.S. (Eng.), L.R.C.P. (Lon.), on the 16th July, 1937.
Dr. W. C. B. Harrison, L.R.C.S., L.R.C.P., L.M. (Irel.), D.P.H. (Dub.), on the 30th July, 1937.
Dr. H. D. Sutherland, M.B., B.Ch., B.A.O. (Belfast), on the 24th September, 1937.

Nursing Sisters :

Miss A. Johnson.
Miss D. Colgate.
Miss M. B. Robinson.
Miss E. F. Frayne.
Miss M. A. J. Poulson.
Miss K. L. Morris.
Miss D. E. Slater.

Departures :

Medical Officer :

Dr. R. R. Murray (Retirement).

Nursing Sisters :

Miss H. B. Eastland (Invalided).
Miss E. M. Wolley (Resigned).
Miss S. Adair (Retired).
Miss D. B. Cumming (Resigned).
Miss A. Johnson (Invalided).

Financial conditions, having imposed actual curtailment of staff in 1933, have continued to impose a state of " marking time " for subsequent years. It is a pleasure to record that improving revenue permitted for 1937 the addition to the establishment of two medical officers, two nursing sisters and one pharmacist-clerk.

NATIVE :

The training of Native Staff is dealt with at page 12

(*b*) Ordinances and Regulations affecting the Public Health enacted during 1937 :

Public Health (Amendment) Ordinance, 1937 (No. 9).
Town Planning (Amendment) Ordinance, 1937 (No. 22).
Townships (Amendment) Ordinance, 1937 (No. 4).

Public Health Ordinance (Cap. 96) :

Health Inspector, new definition substituted in various regulations.

Public Health (Building) (Amendment) Regulations, 1937.

Public Health (Building) Regulations : Applied to Mufulira Township.

Public Health (Sale of Bakery Products) Regulations : Applied to Kitwe Township.

Public Health (Sale of Bakery Products) (Amendment) Regulations, 1937.

Public Health (Tea Rooms, Restaurants, Boarding Houses and Hotels) Regulations : Applied to Kitwe Township.

(*c*) **Finance.**

Total Revenue of Protectorate		£987,894
Total Expenditure of Protectorate		909,252
Health Vote Revenue :		
Hospital Fees	£5,979	
Medical Subsidies	200	
Sale of Drugs and Dressings	261	
		6,440
Health Vote Expenditure		67,924

Health Vote Expenditure = 6.92% of Revenue of Protectorate.
= 7.47% of Expenditure of Protectorate.

SECTION II.

PUBLIC HEALTH.

(*a*) General Remarks.

It is no more possible now than hitherto to base a review of the public health of Northern Rhodesia upon reliable recorded statistics, for such are not available. The Department, however, with the co-operation and help of administrative officers is able to maintain sufficiently close touch with the life of the Protectorate for it to be stated that in 1937 there was no specially heavy incidence of or mortality from disease. There was no widespread epidemic of serious or mild communicable disease. There was no food shortage amounting to or even approaching famine.

The morbidity and mortality of the Protectorate in 1937 as exhibited by the in-patient work of the hospitals and as compared with recent years, appears in the following table :

Government Hospitals : In-Patients.

	Europeans		Natives	
Year	Patients	Deaths	Patients	Deaths
1933 ...	1,349	30	8,376	325
1934 ...	1,483	25	9,078	398
1935 ...	1,666	28	10,643	397
1936 ...	1,691	23	10,700	402
1937 ...	1,731	42	11,922	415

The increasing number of European in-patients is believed to reflect increasing use of facilities available and perhaps some increase of population. In the case of natives, the increase of in-patients by about ten per cent. per annum is believed to result in the main from increasing appreciation of and confidence in European medical methods. The fact that the hospital in-patient mortality of natives (36 per 1,000 admissions) over the five year period is about double that of Europeans (18.6) is attributable to the very large number of natives who postpone admission until already moribund. There appears in the figures, however, a diminishing native in-patient mortality year by year, which may well indicate that resort to European medical assistance is becoming more prompt as well as more willing, as indeed experience shows to be the case.

It has been customary to include at this point in this Report a table showing in-patients treated, with mortality per cent. treated, at each Government Native Hospital during the year reported on and two preceding years. The local fluctuations of native in-patients from year to year have an interest and some importance since they often reflect native satisfaction or dissatisfaction with medical facilities or staff. I do not consider local percentage mortalities calculated on in-patients worth recording and have this year eliminated them from the table below.

Station	Native In-patients treated.		
	1935	1936	1937
Livingstone	1,408	1,406	1,852
Choma	264	286	565
Mazabuka	635	687	583
Lusaka	981	940	879
Broken Hill	1,833	1,637	1,758
Ndola	1,257	1,433	1,481
Fort Jameson	332	468	392
Kasama	299	342	392
Fort Rosebery	416	718	915
Abercorn	146	260	334
Mongu	1,061	889	929
Balovale	1,536	1,534	1,842

Before going on to give notes about the incidence and importance of various diseases it should be said that the information at my disposal indicates that in general the European population enjoyed good health in 1937. A great part, however, of the European population (7,500 out of 14,000) resides in the Copperbelt in the three Mine Townships and receives medical care from the Mine Medical Staff and in Mine Hospitals. The Chief Medical Officer, Rhokana Corporation, reporting for 1937 on European employees at Nkana, numbering just under one thousand, is able to show a very satisfactory " all causes " death rate of 6.36 per thousand per annum with complete absence (for the second year in succession) of fatal accidents. His report indicates that health conditions are satisfactory but he is unable to give statistics which cover the large number of dependants in the Mine Townships.

(1) **General Diseases.**

A survey of reports from twelve medical districts suggests the following remarks.

Syphilis is all too common everywhere and in certain areas affects a very large proportion of the native population; these areas are notably the Baila country round Namwala, where tribal customs as to sex life and habits favour its wide spread; and Barotseland where incidence is certainly increased by the influx of natives from Angola where infection would appear to be rife.

Yaws continues to be focal in incidence, the Zambesi Valley providing most cases; a focus not previously reported has come to light in the Fort Rosebery district in Kasama Lwela's country.

The Medical Officer, Fort Rosebery, has previously reported round celled sarcoma and epithelioma in natives, these growths generally occurring in the sites of old ulcers or burns. He now reports true carcinoma of the stomach, of the large intestine and of the prostate.

Conjunctivitis is specially referred to in reports from three districts. In Mongu, where it is closely associated with the prevalence of flies at the beginning and end of the rainy season, 336 native cases were treated and severe complications were seen. The Medical Officer, Mazabuka, comments on the impairment and even loss of sight which results from neglect of early treatment. The Medical Officer, Fort Rosebery, finds the conjunctivitis in his district to be due to the Koch Weeks bacillus.

Scabies is extremely wide-spread throughout the Protectorate. It seems always to be present in endemic form but epidemic waves are superadded from time to time in this area or that. The disease has a very definite importance and quite serious sequelae are seen following septic infection of the sores produced by scratching.

Influenza was less general than in the previous year but occurred in epidemic form at places so widely separated as Balovale on the Angola border and Fort Jameson on the Nyasaland border. At Broken Hill influenza was epidemic in

August, September and October, affecting especially native adult males with a high incidence of pneumonia (171 cases, 32 pneumonia, 11 deaths of which 10 were from pneumonia); among Europeans the epidemic was mild. At Choma and at Fort Jameson there were two distinct epidemics, abdominal symptoms and long convalescence characterising one wave and bronchial symptoms and a shorter course the other.

The true position regarding amoebic dysentery is unknown but the Medical Officer, Balovale, appears to have established that it is common there; the Medical Officer, Abercorn (only recently arrived there), has reason to suspect it is not rare there; and the Medical Officer, Fort Jameson, encounters it in both Europeans and natives.

Some uneasiness is felt regarding tuberculosis. Cases are not reported in large numbers, but at Medical Officers' stations cases in a highly infective state are seen sufficiently often to suggest that under conditions of African village life very rapid transmission could occur and perhaps is taking place. A rapid course with early death is the rule. Four cases of tuberculosis of bone were reported from Barotseland—a cattle country.

Pneumonia continues to be a chief cause of death for natives and in Broken Hill during 1937 the case mortality appears to have been exceptionally high. There were treated in the hospital 50 cases of pneumonia (other than influenzal pneumonia) with 21 deaths and this high rate of mortality is the more remarkable at Broken Hill since some, probably a majority, of the patients would be mine workers protected by pneumonia inoculation and sent to hospital early in the illness.

Rheumatic affections, as previously, are made a matter for report only from Mongu where 349 cases of " chronic rheumatism and fibrositis " were treated in hospital. These troubles cause much moderate disability among the older people and may be associated with the widespread flooding of the Barotse plain which occurs every year and which in fact largely determines the mode of life of the Barotse people. The Medical Officer, Mongu, thinks there may be some association between these chronic rheumatic affections and dental sepsis since the rottenest tooth is cherished so long as it does not give pain.

It is hardly possible to visit a native hospital without seeing cases of extensive burning and a history is generally given of a fall into the fire during a " fit ". The " fit " is too frequently assumed to be epileptic. Sometimes it is so without doubt. In 1937 Mongu had 50 and Balovale had 39 of these severe burning cases. It is not to be supposed that these two places in Barotseland had between them 89 epileptics who fell or rolled into the fire, nor that epilepsy in Northern Rhodesia is so greatly a monopoly of the Lozi people. Having learnt that cysticercus of the brain is not rare in Southern Rhodesia I made the suggestion in an earlier report that some " fits " resulting in burning may arise from that cause. I have nothing further to adduce to support this suggestion. The smoking of dagga has been put forward as a possible cause of temporary loss of consciousness leading to burning accidents and there is some addiction to dagga around Mongu. This year the Medical Officer, Mongu, suggests that the smoking of crude native tobacco may be at the root of these disfiguring and disabling burnings, a view which is supported by the Assistant Chief Secretary for Native Affairs who knows Barotseland intimately.

Three cases of infantile paralysis occurred at Balovale.

(2) **Communicable Diseases.**

MOSQUITO AND INSECT-BORNE DISEASES.

Among Europeans malaria continues to be the commonest cause of invaliding and, together with blackwater, the commonest cause of death. The vast majority of infections are by the subtertian parasite and the vector is practically always *A. funestus* or *A. gambiae*. In 1937 there were in Government European hospitals 12 blackwater cases with 7 deaths. The total blackwater deaths in the Territory numbered 11. Among Europeans malaria is largely seasonal, the period of heavy incidence being March-April, that is as the rainy season is drawing to an end.

Among natives malaria as an illness is less characteristically seasonal; the infection itself is more chronic and permanent, and cases of malaria as an illness occur at any season if cold, injury or other influence lower resistance.

The malaria and blackwater admissions to Government European hospital, with deaths, (figures in blackets) for the past five years are shown in the following table :

	1933		1934		1935		1936		1937	
Station	Malaria	Black-water	Malaria	Black-water	Malaria	Black-water	Malaria	Black-water	Malaria	Black-water
Livingstone ...	79	5	111	—	102 (1)	1 (1)	168	3 (2)	157	1
Lusaka	120	—	65 (1)	1	85	3 (1)	94 (1)	5	90	4 (4)
Broken Hill... ...	53	5 (1)	111	1	77	1 (1)	67	2	94 (1)	4 (2)
Ndola	87	4 (1)	108	4 (3)	178	3 (1)	140 (1)	4	174	2
Kasama	3	—	7 (1)	—	1	—	1	—	3	—
Mongu	—	—	1	—	1	—	1	—	3	—
Fort Jameson ...	3	—	10	—	13	—	15	—	15	1 (1)
Totals ...	345	14 (2)	413 (2)	6 (3)	457 (1)	8 (4)	486 (2)	14 (2)	536 (1)	12 (7)

Sleeping sickness occurred in its usual way; 34 cases were notified with eight deaths.

In a tour of 180 miles from Mpika to Fort Jameson across the Luangwa Valley in September I failed to find a clinical case of sleeping sickness or to hear of one, and the 37 blood films made were all negative for trypanosomes.

Ticks (*Ornithodorus moubata*) are common in many parts of the country and often very common, but relapsing fever due to tick-borne *S. duttoni* is not common. Perhaps most cases are seen at Fort Jameson where in 1937 one European case and 50 native cases were treated. Bismuth by intramuscular injection is found to be equally effective with the more expensive arsenicals.

Early in the year bubonic plague was reported from the Balovale district of Barotseland and was confirmed. There were nine cases in all with three deaths. The following extract from the Medical Officer's annual report indicates how the outbreak was handled. Over 40,000 rats were accounted for in the campaign.

> "There was a small outbreak of plague at Nasimento's village near Chitokoloki Mission Station during the early part of the year. There were three deaths, the mortality being less than from respiratory infections. Mission teachers from Chitokoloki were conscripted, lectured to on the cause and methods of combating the disease and sent out radially from Chitokoloki as far as the Kabompo and Makondo rivers with instructions to retail the lecture to all Chiefs, Headmen and villagers on their assigned route. Stress was laid on the necessity for cleaning up villages, protecting grain stores, slaughtering rats and doing everything possible to discourage rats from coming into intimate contact with villagers. Fortunately the disease did not spread."

Almost simultaneously with the report of plague at Balovale came a report of plague or something like it near Mulobezi where is the mill of the Zambesi Sawmills Limited with a large labour encampment. This area is traversed by labour finding its way voluntarily to the Rand and is fairly near the place where these travellers cross the Zambesi and some anxiety was felt in the South. At the invitation of the Rand Chamber of Mines the principal medical officers of Bechuanaland, Northern Rhodesia and Southern Rhodesia met Dr. A. J. Orenstein, C.M.G., in conference at the Victoria Falls Hotel when precautionary measures were agreed upon. A medical officer toured the villages of the Mulobezi area but no evidence of a fatal enzootic among rodents was found and no confirmation could be obtained of any human case.

(3) Infectious Diseases.

Scarlet fever is uncommon within the tropics, but in 1937 we had two small epidemics. There were nine cases among the girls at the Government boarding school at Choma; all were mild cases and no albuminuria occurred. There were also six cases at Broken Hill in children; all cases were mild and without complication. Simultaneously with the occurrence of scarlet fever among children at Broken Hill there was a fairly wide-spread incidence of pharyngitis among adults.

(3) Infectious Diseases.

Notifications were as follows :

Corresponding Number in International List, 1929	Diseases	Cases		Deaths	
		Europeans	Natives	Europeans	Natives
1a	Typhoid fever	6	15	1	2
4	Relapsing fever	2	86	—	1
6	Alastrim	—	27	—	—
7	Measles	22	121	—	4
8	Scarlet fever...	21	—	—	—
9	Whooping cough	12	134	—	—
10	Diphtheria	4	1	—	—
11	Influenza	—	28	—	7
13a	Dysentery-Amoebic	9	44	—	—
13b	Dysentery-Bacillary	2	12	—	3
13c	Dysentery-Undefined	—	97	—	2
14a	Bubonic Plague	—	9	—	3
18	Cerebro-Spinal Meningitis	6	12	2	6
	German Measles	4	—	—	—
	Varicella	76	213	—	18
23	Tuberculosis-Pulmonary	6	58	2	19
	Tuberculosis-Spine	—	5	—	1
24–32	Tuberculosis-Glands	—	2	—	—
33	Leprosy	—	107	—	4
	Erysipelas	5	3	—	1
	Anterior Poliomyelitis	1	3	—	—
39	Yaws	—	238	—	—
39	Trypanosomiasis	—	34	—	8
	Anthrax	—	6	—	1
44	Blackwater fever	15	—	8	—
74	Pneumococcal-Meningitis	—	2	—	2
125	Amoebiasis	—	9	—	—
140–150	Puerperal Septicaemia	—	1	—	—
151–156	Tropical Ulcers	—	452	—	—

Measles was on the whole less prevalent than in recent years but sporadic cases appeared throughout the year at Broken Hill and there was one severe case in a European child at the Choma boarding school.

At Balovale, coincident with the early rain, there was an epidemic of whooping cough among native children with respiratory complications and appreciable mortality.

(4) Helminthic Diseases.

Chief interest regarding helminthic diseases centres round bilharzia. Our knowledge of its incidence and distribution is very far from complete and we are a long way from being able to assess with any accuracy what effect it may have upon working efficiency and the economic life of the country. Each year seems to make it clearer (*a*) that the infection is much commoner than has been realised ; (*b*) that the infection is frequently present without causing recognised symptoms or complaint ; and (*c*) that present text book accounts of bilharzia as a clinical entity give a very incomplete picture of the disease and might well lead to many cases being overlooked.

Two medical officers report that so soon as the addition to the staff of a competent microscopist permitted full routine examination of every native case admitted, twenty per cent. or more of all admissions were found to be infected with either *S. haematobium* or *S. mansoni* and the majority exhibited no symptoms ordinarily associated with schistosomiasis ; this was at Broken Hill and at Choma. Thirteen cases, all *S. haematobium* were treated at Fort Jameson. The Medical Officer, Balovale, describes schistosomiasis as very common, *S. mansoni* infection predominating. He treated 95 *S. mansoni* infections and 24 of *S. haematobium*. At Mazabuka infection by *S. haematobium* is common but symptoms are few. In the Fort Rosebery district *S. haematobium* infections are commonly found throughout and *S. mansoni* infections occur in the Luapula Valley but appear to be limited to that area.

Few cases of schistome infection were seen at Abercorn and, in 1937, none at all at Mongu.

From experience recently gained among European patients there appears to be no doubt that medical officers are able and indeed must learn to be able to diagnose schistosomiasis more than tentatively without microscopic demonstration of the fluke eggs and certainly without any history of exposure to infection.

Infestation by hookworm is certainly common among the native population but on the whole the infestations are light. There are probably sharp differences between the state of affairs in areas with low rainfall and in the heavier rainfall areas like Mwinilunga and in the Bangweulu swamp villages.

Our present knowledge is not sufficient to enable us to say, with any accuracy, to what extent hookworm infestation is of economic importance in this area or that. Experience in Northern Rhodesia confirms my opinion formed elsewhere many years ago that hookworm infection and hookworm disease are not synonymous terms.

Precautions against the acquisition of hookworm in the copper mines are very well and thoroughly applied. The Nkana Mine had no cases in European miners in 1937.

Round worm (ascaris) is common almost everywhere and in the Bangweulu swamps must be nearly universal.

The only filaria worm infection which I know to occur in the Protectorate is by *F. perstans.* It is encountered by no means rarely in films under examination for other parasites. It was present in one third of the 37 films which I obtained when travelling across the Luangwa Valley in 1937, but it was present with no greater frequency in films kindly taken for my by Mr. Fox Pitt in the same area, from natives suffering from an enlargement of the leg variously known as "muvamba" and "muchecha" among natives and "elephantiasis," "Serenje leg," "Feira leg," etc., among Europeans. This condition, whatever it may be, does not closely resemble *F. bancrofti* elephantiasis as I have seen it elsewhere. "Serenje leg" is, on the whole, an enlargement without loss of shape—a proportionate enlargement of calf and ankle. Indeed, in the early stages, the impression sometimes given is that the affected leg is the healthy one and the healthy one atrophied.

VITAL STATISTICS.

European Deaths

Ages	Number of Deaths
Under 1 day	3
1 to 7 days	3
1 to 4 weeks	—
4 weeks to 3 months	—
3 to 6 months	3
6 to 9 months	2
9 to 12 months	—
1 to 2 years	1
2 to 3 years	1
3 to 4 years	2
4 to 5 years	1
Total under 5 years	16
Deaths at all Ages	115

European Infant Mortality

Year	Deaths under 1 year	Births	Deaths under 1 year per 1,000 Births
1937	11	296	37.16

The infant mortality per 1,000 births is double that for 1936. Large fluctuations are to be expected when rates per 1,000 are calculated on total births of a few hundred.

The causes of death were as follows :

Premature Birth	4
Malaria	2
Double Pneumonia	1
Congenital Debility	1
Acute Gastro Enteritis	2
Inflammation of Stomach	1
	11

Deaths of Males and Females from Various Causes at all Ages

Corresponding number in International List. (1929 Revision)	Causes of Deaths	1937 Males	1937 Females	Totals
1a	Typhoid fever	1	—	1
13b	Bacillary Dysentery	2	—	2
14c	Septicaemia	2	—	2
23	Pulmonary Tuberculosis	4	1	5
38	Malaria	5	3	8
44	Blackwater Fever	8	3	11
44	Meningitis	—	1	1
45-53a	Cancer, Malignant	4	1	5
55	Carcinoma of Bladder	1	—	1
59	Diabetes	—	1	1
82	Cerebral Haemorrhage	2	—	2
70-74	Renal Calculus	1	—	1
83-87	Hemiplegia	—	1	1
90-95a	Heart Diseases	11	2	13
96-103	Diseases of the circulatory system ...	4	1	5
106	Bronchitis	1	—	1
107a	Broncho Pneumonia	4	1	5
108b	Lobar Pneumonia	3	—	3
107-109	Double Pneumonia	1	—	1
109c	Pneumonia Unclassified	2	2	4
109e	Hypostatic Pneumonia	1	—	1
110-114	Pulmonary Silicosis	1	—	1
115-118	Other diseases of the digestive system	—	1	1
120a	Acute Gastro Enteritis	—	2	2
121	Appendicitis	1	—	1
122	Intestinal Obstruction	2	—	2
124	Cirrhosis of the Liver	3	1	4
126	Peritonitis	—	1	1
131	Chronic Nephritis	3	—	3
142b	Ectopic Gestation	—	1	1
151-156	Diseases of Bones and organs of locomotion	—	1	1
158a	Congenital Debility	1	—	1
159b	Premature Birth	1	3	4
162	Senility	2	2	4
163-171a	Suicide	1	1	2
172-198	Asphyxiation by gas...	1	—	1
163-198	External Causes	11	—	11
199-200	Ill-defined Causes	1	—	1
	Total	85	30	115

(3) European and Native Officials.

	Eur. 1935	Nat. 1935	Eur. 1936	Nat. 1936	Eur. 1937	Nat. 1937
Total number of officials resident	552	2,595	611	2,550	616	2,786
Average number of officials resident ...	466	2,409	536	2,376	547	2,685
Total number on sick list	246	2,252	269	3,972	258	2,309
Total number of days on sick list	2,547	15,143	2,845	15,649	2,399	16,180
Average daily number on sick list	6.97	41 .48	7.82	42.87	6.57	44.33
Percentage of sick to average number resident	1.49	1.72	1.45	1.80	1.20	1.65
Average number of days on sick list for each patient	10.35	6.72	10.57	3.93	9.29	7.01
Average sick time to each resident	5.44	6.28	4.65	6.58	4.38	6.01
Total number invalided	1	16	—	25	3	24
Percentage of invalidings to total residents ...	.18	.62	—	.98	.48	.88
Total deaths	2	19	—	13	4	10
Percentage of deaths to total residents ...	.36	.73	—	.50	.65	.36
Percentage of deaths to average number of residents	.43	.78	—	.54	.73	.38

SECTION III.

HYGIENE AND SANITATION.

(*a*) General Review of Work Done and Progress Made.

(1) Preventive Measures.

This section of the Report for 1936 commenced with the words "Preventive measures require staff and money"; this is still true. The year under review saw the addition to staff (in September) of one medical officer for health duties and some increase in funds for anti-malaria work. Apart from the addition of one medical officer for health duties the "preventive" staff remained as exiguous as ever—three health inspectors for the whole Protectorate plus two employed by local authorities. For "work done" one cannot claim more than maintenance of the *status quo* and for "progress made" a certain liveliness in Livingstone where the activities of a whole-time Medical Officer of Health were something of a novelty and a little disturbing.

The drainage work at Lusaka referred to last year was consolidated and improved and its benefit was evident at the season (March-April) when most malaria is expected.

Towards the end of the year, in response to a suggestion by the General Manager of the Rhodesia Railways, His Excellency the Governor convened a Conference under my chairmanship of representatives of various parties interested in malaria prevention in Livingstone and neighbourhood. Representatives of Government, Livingstone Municipal Council, Rhodesia Railways and Zambesi Saw Mills met and drew up proposals for joint financing of work which, together with work already done by the Railway Company, should go a long way to reduce malaria in Livingstone to or near to vanishing point. The proposals were endorsed by the authorities represented, so that from 1st January, 1938, there will be available £100 a month for anti-malaria work in Livingstone under the direction of the Medical Officer of Health and a Government Health Inspector.

I stated in my last report that I thought it unfortunate that the care of the public health should be, in British dependencies, among the first matters in which power and responsibility are delegated by the central government to young, immature and poor local authorities. I still hold that opinion and note that recommendations of the recent Royal Commission on Trinidad disturbances have led to the restoration of executive authority in local public health matters to the central government's health department. This, of course, postulates the central government's health department's being adequately staffed and equipped for extensive public health duties which is not the case at present in my own department, and I have no immediate recommendation to make regarding the smaller local authorities here, beyond those recommendations for departmental expansion referred to at the bottom of page 10 of last year's Report and since then submitted to Government in both preliminary and revised form.

Regarding the two municipalities and the larger and more stabilised townships, most of which do show evidence of a desire to tackle their public health problems, I recommend the introduction of a system of grants-in-aid from the central government in respect of public health staff and services, on the same general lines as have obtained for many years in Britain.

(2) General Measures of Sanitation.

Throughout most of the Protectorate, where there is any organised system, the pail system of sewage disposal is in use, and in European quarters the system is generally carefully and satisfactorily worked. In my experience pail closets in native locations are seldom if ever other than grossly insanitary.

The Lusaka water supply from bore holes continues to be satisfactory in quality and quantity though very hard. Storage capacity is the same as hitherto and in my opinion is inadequate, being a fraction of a day's supply. There has been practical demonstration of the inadequacy of the stand-by pumping arrangements referred to last year but I understand this to have been remedied.

(3) School Hygiene.

Government Medical Officers inspected all the European schools and scholars twice during the year. A good deal of evidence of poor nutrition was reported and signs of endemic malaria were evident. The usual dental inspections were made and again one must deplore parents' unwillingness to have recommended treatment carried out although this is available free to the impecunious. Some parents even refuse their children the advantage of free dental examination.

It has been arranged that in 1938, all school children will be examined by the same officer and it is anticipated that his report may be of great value.

(4) Labour Conditions.

Organised recruiting of labour for employment outside Northern Rhodesia again increased. The voluntary exodus from the Protectorate on foot to the South via Kazangula ferry ; to the South by train across the Falls bridge ; on foot to Tanganyika by many routes ; and on foot from the Eastern Province to Southern Rhodesia must reach a very large total of individuals.

The medical department had occasion to report very unfavourably to the administration upon the conditions under which recruited labour was being handled by a licensed recruiting agent at Livingstone. Up to the end of 1937 no improvement had been made, but refusal to renew the licence for 1938 brought the offender to his senses. It is recruiting agents such as this, who will not, without compulsion, comply with the requirements of the law, of humanity, or of decency, who cause misgivings about a system which, properly conducted, is helpful and beneficial to the labourers themselves and to their country of origin and reasonably profitable to the recruiting agents.

The conditions under which labour is employed at the copper mines of Northern Rhodesia and at Broken Hill Mine are very good. These large industrial undertakings realise the value of their labour. Housing, rationing, sanitary arrangements, safety precautions and medical facilities for employees are satisfactory and the care of and interest in employees' dependants are increasing. Amenities such as playing fields, planting of shade trees in locations and the like are increasing and such things have a very definite relation to the well-being of labour.

There was negotiated during 1937 an arrangement whereby each of the three big copper mining concerns undertook to employ a welfare sister for work among dependants in its mine location, while Government undertook to employ a welfare sister for work among natives in each of the public township locations adjoining mine townships. This means the employment of six welfare sisters in the copperbelt and Government approved the financing of the work (not personal emoluments) of these sisters to the extent of £250 each from profits of the canteens at the mining centres. It must be understood that in working among Africans it is not possible (nor indeed desirable) to restrict the work of a welfare clinic to such work as might be thought proper for such a clinic in Britain. A welfare clinic which gains the confidence of the African quickly becomes a centre for any and every kind of help, advice and treatment which it is possible for a medical organisation to provide and there can be no doubt as to the popularity of these clinics with the native people or as to the value of the work done there.

As I have reported before, the conditions under which some thousands of labourers are employed by the Zambesi Saw Mills at Livingstone, at Mulobezi and in the forest camps are less satisfactory than obtain in the mining industry, especially in respect of medical care and sanitary arrangements. Improvements have been made but more are required.

I have reported before that I am not altogether satisfied with the conditions under which agricultural labour is employed. Not long ago an official report on native affairs stated openly that farmers could not afford to give their employees even the minimum of housing and rationing which is required by law. The Committee on Diet and Nutrition appointed by the Governor said in their Report that any question of increased settlement of Europeans on the land in Northern Rhodesia should be considered in light of the fact that agricultural labour in Northern Rhodesia receives the lowest wages, the poorest rations and the worst housing.

I am of opinion that many employed natives (especially agricultural labour) who need hospital treatment do not get it because their employers discharge them sooner than pay 1*s.* 6*d.* a day for their maintenance in hospital during treatment although the liability is limited to 30 days.

(5) Housing.

The housing of industrial and agricultural labour has been referred to above under " Labour Conditions ".

There is much room for improvement of the housing in the larger town locations on the railway line and it appears to me that a necessary preliminary step is to decide in principle (*a*) who is responsible for housing Africans within or in connection with European townships and (*b*) who is to be housed in township locations.

The answer to (*a*) appears to me to be that the Local Authority, which body is charged by statute with the care of health and of good order in the township, must be responsible for provision of suitable housing. But since the proper discharge of those duties is in the interests of the state as a whole and may well require expenditure beyond the Local Authority's own resources and beyond what can be recovered as rent either from the occupants or their employers, there should be a right to look for financial assistance from the central government according to well established British practice.

Regarding the question " Who is to be housed in township locations ? " I think such residence should be strictly limited to those Africans who have a *bona fide* occupation related to the everyday life of the European township. It would probably be necessary to provide also something by way of a casual ward where genuine seekers for work might live for a limited period, but the mass of unemployed, of lodgers, spongers and undesirables so commonly found in the town locations at present should be rigorously excluded.

This leads me to refer to the management of township locations and to deprecate the tendency to appoint to the post of compound manager someone with no stronger qualification than the need of a job. The very admirable work done by the best compound managers emphasises the pity of these unsuitable appointments. There would be much to say in favour of the appointment to such posts of fully qualified sanitary inspectors and Government approval of appointments is perhaps desirable as is now necessary in the case of managers of mine locations.

(6) Food in Relation to Health and Disease.

During the year under review the Committee appointed by His Excellency the Governor at the instance of the Secretary of State studied various aspects of diet and nutrition in the Protectorate and submitted a report which has since been printed. That report, like corresponding reports on other colonial dependencies, made it clear that there is great scope for improvement of native dietaries for the purpose of betterment of nutritional condition and showed also that while certain ameliorative measures may be taken at once, considerable further and detailed scientific study is required.

In the principal centres of European population there is reasonably adequate inspection and control of food for sale but the posting of a whole-time Medical

Officer of Health in Livingstone quickly showed that there is much room for improvement.

Milk supplies are nowhere to be regarded as safe without boiling or pasteurisation. I receive complaints about the sale of native milk in dirty bottles with the suggestion that special bottles should be compulsory. There is no advantage, but rather added danger, in putting dirty milk in clean bottles. Insistance on the special bottles might well put native purveyors out of business which in many parts would mean a shortage of supply ; and further, the nutritive quality of native produced milk is frequently higher than that of milk produced by Europeans ; nor is it by any means general that milk produced by Europeans is safer or more cleanly produced than native produced milk.

No serious shortage of food in native areas came to my notice in 1937.

(*b*) Measures Taken to spread the knowledge of Hygiene and Sanitation.

In all schools, native and European, lessons in hygiene are given and the same subject is taught in the special curricula for those in training to be teachers.

In the Jeanes School special emphasis is given to hygiene in the course undergone by prospective Jeanes teachers and their wives. Reports of the activities of Jeanes teachers in connection with hygiene and sanitation in native areas continue to be most satisfactory and the interest of the statutory native authorities in hygiene and sanitation is being cultivated and stimulated by district officers with success.

Medical Officers on tour find, as a rule, a favourable response from Chiefs who are encouraged to demand cleanliness and order in their villages.

At a course of instruction for Chiefs given at the Jeanes School, the lessons given by a Medical Officer were listened to with interest and at least some small results are seen in the villages.

For the native agricultural show held in the Sala Reserve there was organised at very short notice a demonstration of first aid by pupils of the Medical Training School, and a model dispensary, model hut and model latrine were erected and demonstrated to very large numbers.

(*c*) Training of Health Department Personnel.

In my last report I referred to the opening, on 1st October, 1936, of the Native Medical Training School at Lusaka and recorded that by the end of the year (*i.e.*, after three months working) it appeared probable that out of the initial 24 pupils we might expect to obtain, after one year's training, about 15 who would excel any " medical orderlies " hitherto available to the Department. The expectation proved well founded as did the opinion, formed early during the course of training, that the minimum standard of general education should be Standard VI. With one exception the Standard IV boys found the course too difficult ; other jobs were found for them and they were discharged from the School. The experience gained during the first course of training was reviewed when the course ended in September, and it was decided to extend the next course to two years, the first six months to be spent doing minor practical ward work in a " feeder " hospital near the pupil's home. This method of testing whether a pupil has " vocation " or not was copied from Kenya practice.

It was convenient that the " feeder hospital " period of the second batch of pupils should coincide with the long leave of the Medical Officer in charge of the School, and during this period (October, 1937—March, 1938) a refresher course was conducted at the School by the Medical Officer, Lusaka Native Hospital, for 15 senior members of the native medical staff.

In the medical department there is considerable opportunity and indeed need for the employment of native girls trained in nursing duties, elementary midwifery and simple welfare work.

Progress in this direction is limited by the small number of girls available with the requisite general education. Few with even Standard IV certificates can be obtained and only very rarely does one with Standard VI come forward.

The most pressing need is still for trained native boys and in the midst of other work it has not been possible both to organise the training of boys, which is progressing well, and to put the training of girls on the same systematic footing. Indeed the scarcity and uncertainty of the supply of suitable girl candidates has ruled out any such organised training.

For two years now, such suitable girl candidates as have come forward have been accepted and have been given practical training in the wards, but no set lectures. These girls when drafted to hospitals have been a success but marriage generally deprives the department of their services all too quickly.

Mbereshi Mission (London Missionary Society) has for years been receiving a large grant from Government for training girls in medical work, but the results so far as concerns producing native female nurses or welfare workers for employment by Government have been negligible. One, who is paid by Government, is doing medical and welfare work, under Mission supervision, in villages near the Mission. The reasons for this appear to be—

(*a*) that the Mission aims at giving some knowledge of medicine and hygiene to girls destined to be village mothers rather than at training nurses or welfare workers for employment in hospitals and clinics ;

(*b*) that the best educated girls do not seem to be given medical training ;

(*c*) that medical training is given in the vernacular which, in my view, can never produce satisfactory female nurses and welfare workers.

I should add that there is some perhaps understandable unwillingness on the part of mission authorities to have girls educated by them given medical training likely to entail their being sent, after training, to a station distant from the mission which trained them and from the girls' own homes. This feeling is shared to some extent by the girls themselves.

(*d*) Recommendations for Future Work.

Last year's Report stated that recommendations would be made to Government in connection with the medical arrangements at Broken Hill, the staffing of the Medical Department in relation to the medical and public health needs of the Territory and the existing arrangements regarding medical stores.

Recommendations on all these points and on others, notably regarding laboratory facilities, were made to Government and copies were embodied in a memorandum prepared for the Pim Commission.

SECTION IV.

PUBLIC HEALTH WORK AND ADMINISTRATION.

The only shipping port in the Protectorate is Mpulungu on Lake Tanganyika visited monthly by a Lake steamer of the Tanganyika Government. The Medical Officer, Abercorn, visits the ship and performs the ordinary duties of a port health officer. Nothing requiring record occurred in the course of this duty in 1937.

Aircraft from the north (Kenya and Tanganyika) land first in Northern Rhodesia at Mpika ; from Salisbury at Lusaka ; and from Bulawayo at Livingstone. The latter two airports possess all the requirements of a "sanitary aerodrome" but Mpika does not possess even the requirements of an "authorised aerodrome." It is understood that the air service from the north is to make Kasama its first landing, and that airport conforms to the requirements of an "authorised aerodrome." This Protectorate has signified its adherence to the International Sanitary Convention for Aerial Navigation from such time as the courses to be followed by air services are settled.

SECTION V.

MATERNITY AND CHILD WELFARE.

The Welfare Clinics established at Livingstone, Lusaka, Ndola and Luanshya have been maintained. At Livingstone, Lusaka and Ndola both European and Native work is undertaken in separate Clinics. At Luanshya only native work is carried on. As has been said elsewhere in this Report a welfare clinic for natives can never limit its work to what would fall within maternity and child welfare work at home. That work goes on and is increasingly appreciated and special sessions can generally be organised for mothers, expectant mothers and babies, but a well run clinic soon becomes the centre to which are brought, in the first place, all the manifold major and minor ailments and worries of the native community.

Arrangements were made during the year for a great increase in welfare work in the copperbelt. Thesse have been outlined on page 10 under "Labour Conditions" and it is anticipated that similar activities will be started at Broken Hill in 1938. This increased work will fall to be reported on in this section in my future annual reports.

SECTION VI.

HOSPITAL, DISPENSARIES AND VENEREAL CLINICS.

Government maintained seven European and twelve Native Hospitals throughout the year. No additional hospitals were built and no existing hospital was replaced by a new building. During the year information was received that the Colonial Development Advisory Committee had approved the free grant of half the capital cost of the following :

Native Medical Training School,
Native Hospital, Lusaka,
Native Hospital, Abercorn,
Native Hospital, Fort Jameson,
22 small rural hospitals and dispensaries.

Tentative provision was made in the Estimates for 1938 for these additions.

The Roan Antelope, Mufulira and Rhokana Copper Mining Companies continue to maintain admirably staffed and equipped hospitals for European and Native employees and dependents. On a fee basis these Companies give the services of their hospitals and staffs to Government servants and dependents in the Copperbelt and also to such unemployed natives as cannot be transferred for treatment to the Government Hospital at Ndola.

During 1937 Government maintained 29 rural dispensaries staffed by Africans. Some of these dispensaries accommodate a few in-patients. The majority of these dispensaries are situated at administrative stations and receive immediate supervision from district officers all of whom show interest in medical work and some of whom display notable talent in diagnosis and treatment.

The recommendations I have made to Government for expansion of the work of the department include arrangements for greatly increased supervision of rural dispensaries.

There are approximately 30 mission hospitals and dispensaries in the Protectorate but there is a much greater number of mission stations and few if any of them do not provide some medical aid to natives. At present there are eight qualified medical practitioners attached to missionary societies and a considerable number of trained nurses, but the number is constantly changing since it is quite exceptional for a missionary doctor to be replaced during temporary absence of twelve months or so. Lack of continuity is the great weakness of mission medical work and one of the chief reasons why I am opposed to the suggestion frequently made to me that Government might conduct its native medical work through missions on somewhat the same lines as educational work is done. There is more than one station where once there was really first class missionary medical work where now, owing to staffing difficulties, both quality and quantity of work have tragically declined. As I reported last year, I have noticed an inclination for some missionary societies to wish to multiply dispensaries (as some multiply schools) in relation to, not to say in rivalry with, the activities of societies of other denominations, rather than in relation to real medical needs of the population.

It is right to place on record my own and Government's appreciation of the very large amount of really good medical work done by mission societies, and our appreciation of the fact that societies receiving grants-in-aid, with perhaps one exception, give to the native population devoted service and real benefits whose value and whose actual cost far exceed the amount of the grant given by Government. The total of grants-in-aid in 1937 was £3,165.

At the Lusaka Native Welfare Clinic there is a special session once a week for venereal disease in women. Otherwise there are no special venereal disease clinics but all hospitals and most dispensaries treat venereal disease day in and day out.

European Hospitals

	Year	Admissions	Deaths	Daily Average
Livingstone	1936	435	5	11.5
	1937	528	14	12.76
Lusaka	1936	405	6	10.29
	1937	416	14	11.95
Broken Hill	1936	297	8	5.57
	1937	362	6	7.41
Ndola	1936	444	4	11.81
	1937	344	3	8.38
Fort Jameson	1936	58	—	1.41
	1937	58	4	1.64
Kasama	1936	3	—	.10
	1937	12	1	.18
Mongu	1936	10	—	.20
	1937	11	—	.25

Native Hospitals.

	Year	Admissions	Deaths
Livingstone	1936	1,289	74
	1937	1,761	118
Choma	1936	363	9
	1937	552	14
Mazabuka	1936	657	23
	1937	556	18
Lusaka	1936	916	72
	1937	842	42
Broken Hill	1936	1,556	61
	1937	1,699	74
Ndola	1936	1,355	72
	1937	1,394	60
Kasama	1936	225	14
	1937	369	11
Fort Rosebery	1936	706	10
	1937	881	13
Fort Jameson	1936	448	14
	1937	372	15
Abercorn	1936	248	5
	1937	322	5
Mongu	1936	799	29
	1937	850	21
Balovale	1936	1,432	19
	1937	1,748	24

Out-Patients—Natives.

	Number Treated	Number of Attendances
Livingstone	1,100	3,568
Choma	1,543	8,866
Mazabuka	1,709	19,724
Lusaka	1,483	—
Broken Hill	2,990	6,161
Ndola	7,404	11,760
Kasama...	2,937	10,523
Fort Rosebery	6,284	18,113
Fort Jameson	2,035	—
Mongu	6,681	38,658
Balovale	4,050	10,402
Abercorn	3,278	22,318

SECTION VII.

PRISONS AND ASYLUMS.

There are no asylums or mental hospitals in the Protectorate. All European mental cases requiring institutional treatment and certain native cases are sent to Ingutsheni in Southern Rhodesia or other institutions outside Northern Rhodesia at Government expense. The cost to Government of these cases was £1,838 in 1937. Other cases of mental illness in natives are either confined in one of the prisons or looked after in their villages, neither of which expedients is satisfactory. I have previously reported and it is generally admitted that the present situation is thoroughly bad and its early remedy is to be hoped for.

The health of prisoners and the sanitary state of prisons has been satisfactory throughout the year. In the prisons there has been no epidemic and no deficiency disease nor institutional disease.

SECTION VIII.

METEOROLOGY.

Temperatures are moderate during the winter months, viz., from April to August. In low-lying parts the temperature varies from 70° to 90° with a maximum of 103° and a minimum of 56°. In the high plateau the temperature varies from 55° to 75° with a maximum of 86° and a minimum of 40°.

The average rainfall varies from 50 inches in the northern and high-lying portions of the Territory to 25 and 30 inches in the southern and south-eastern parts. On the average little or no rain falls during the period May to September. The month of October usually brings from about half an inch to two inches. The period, November to March, is the real wet season, during which from 70 to 90 per cent. of the total annual rainfall occurs.

SECTION IX.

SCIENTIFIC.

No laboratory work other than the routine examinations of urine, blood and stools was done during the year. There being no medical laboratory, it goes without saying that no research was conducted.

Native microscopists were stationed at all the large hospitals on the railway line and did useful work.

Under the supervision of Dr. Board, the medical officer in charge of the Native Medical Training School, the native microscopist attached to Lusaka Native Hospital did excellent work in training the school pupils in simple laboratory work.

Examinations during the year revealed the following :

LUSAKA LABORATORY ANNUAL REPORT, 1937.

Month	No. of slides examined	Albumin	Ancylostome	Bilharzia	Trichomonas	Strongyloides	Tubercle Bacilli	Trypanosome	Filaria	Oxyuriasis	Taenia	Leprosy	Gonococci	Tick Fever	Amoeba	Malaria	Meningococci
January ...	501	71	30	15	—	1	1	—	4	2	—	—	3	—	4	41	—
February ...	600	90	21	19	1	—	—	4	2	1	—	1	15	1	—	62	—
March	488	76	10	6	—	2	—	2	—	—	1	—	11	—	3	53	—
April	459	50	27	21	—	—	1	—	—	5	—	1	1	1	4	72	—
May	521	37	15	18	2	—	—	1	—	—	1	—	6	—	1	30	—
June	310	71	50	30	1	4	—	—	1	11	—	—	6	—	5	12	—
July	225	41	38	26	3	1	2	2	2	—	—	—	1	2	1	18	—
August	300	19	46	30	4	—	3	4	3	1	1	—	—	—	1	10	—
September ...	200	18	31	22	1	3	—	1	—	6	—	—	—	—	—	25	—
October ...	241	28	40	40	—	—	—	—	12	7	—	—	1	—	5	16	—
November ...	226	46	19	15	1	1	—	—	—	8	—	—	2	—	6	20	—
December ...	353	53	11	10	—	2	—	—	—	9	—	—	2	—	9	34	—
Totals ...	4,424	600	338	252	13	14	7	14	24	50	3	2	48	4	39	393	—

J. F. C. HASLAM, M.C., M.D., F.R.C.P.E., D.P.H.,
Director of Medical Services.

ADMINISTRATION.

Table I.

Staff as at 31st December, 1937.

European :	
Director of Medical Services	1
Specialist Surgical Officer	1
Medical Officers	16
Pharmacist and Storekeeper	1
Pharmacist—Clerks	2
Clerk Dispenser	1
Accountant	1
Clerks	4
Matrons	2
Nursing Sisters	34
Female Ward attendants	7
Health Inspectors	3
Dispenser (part paid by the Broken Hill Development Company)	1
African :	
Native Clerks	12
Orderlies and other medical staff	140
Other Servants	192
Sanitary Overseers	5
Malaria Control Boys	61

Table V.

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1937.

ALL EUROPEAN HOSPITALS.

Diseases	Remaining in Hospital at end of 1936	Yearly Totals		Total cases Treated	Remaining in Hospital at end of 1937
		Admissions	Deaths		
I. Epidemic, Endemic and Infectious Diseases.					
1. Enteric Group.					
a. Typhoid Fever	...	3	1	3	1
d. Paratyphoid undefined	...	1	...	1	...
3. Relapsing Fever	...	1	...	1	1
5.e Malaria Aestivo Autumnal.	12	526	1	538	5
e Blackwater	...	12	7	12	1
d Cachexia	...	1	...	1	...
7. Measles	...	2	...	2	...
8. Scarlet Fever	...	1	...	1	1
10. Diptheria	...	1	...	1	...
11. Influenza	...	50	...	50	...
16a. Dysentry-Amoebic	...	12	...	12	...
b. Dysentry-Bacillary	...	8	...	8	...
c. Dysentry-Undefined	...	1	...	1	...
21. Erysipelas	...	1	...	1	...
24. Cerebro Spinal Fever	...	1	1	1	...
31. Tuberculosis Pulmonary...	1	6	2	7	1
40a. Gonorrhoea and its complications ...	...	1	...	1	...
II. General Diseases not mentioned above.					
43. Cancer	...	5	2	5	1
44. Cancer of Liver	...	1	...	1	...
47. ,, of the Breast	...	1	...	1	...
48. ,, Sarcoma	...	2	...	2	...
50. Tumours non-Malignant	...	1	...	1	...
51. Acute Rheumatism.	...	3	...	3	...
52 Chronic ,, ...	...	14	...	14	1
57. Diabetis	...	1	...	1	...
58b. Anaemia	...	2	...	2	...
64. Diseases of the Spleen	...	1	...	1	...
66. Alcoholism	1	5	...	6	...
III. Affections of the Nervous System and Organs of the Senses.					
75a. Hemiplegia	...	2	1	2	...
76. General Paralysis of the Insane ...	...	1	...	1	...
77. Other forms of Mental Alienation ...	1	1	...	2	...
78. Epilepsy	...	1	...	1	...
82A. Hysteria	...	2	...	2	2
B. Neuritis	...	2	...	2	...
C. Neurasthenia	...	5	...	5	...
83. Cerebral Softening	...	1	...	1	...
85b. Conjunctivitis	...	4	...	4	...
e. Other affections of Eye	1	5	...	6	...
86. Affections of the Ear	...	8	...	8	...
IV. Affections of the Circulatory System.					
87. Pericarditis	...	1	...	1	...
88. Acute Endocarditis	...	5	...	5	...
90a. Valvular Disease of the Heart	...	1	...	1	1
Mitral Disease of the Heart	...	2	...	2	...
b. Myocarditis	...	9	4	9	1
92. Embolism	...	1	...	1	...
93. Haemorrhoids	1	9	...	10	1
Varicose Veins	...	8	...	8	...
Phlebitis	...	1	...	1	...
94. Lymphangitis	...	2	...	2	...
96. Other affections of the Heart	...	4	2	4	...
Carried forward	17	739	21	756	15

TABLE V.—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1937.
ALL EUROPEAN HOSPITALS.

Diseases	Remaining in Hospital at end of 1936	Yearly Total		Total cases Treated	Remaining in Hospital at end of 1937
		Admissions	Deaths		
Brought forward ...	17	739	21	756	15
V. Affections of the Respiratory System.					
97. Adenoids ...	...	3	...	3	...
Coryza ...	...	1	...	1	...
98. Laryngitis...	...	2	...	1	...
99a. Bronchitis, Acute ...	1	16	1	17	1
b. Bronchitis, Chronic ...	...	1	...	1	...
100. Bronco-Pneumonia ...	...	8	2	8	...
101a. Lobar Pneumonia ...	...	4	2	4	1
b. Unclassified Pneumonia...	...	1	...	1	1
c. Influenzal Pneumonia ...	...	1	1	1	...
102. Pleurisy ...	1	6	...	7	...
Empyema...	2	...	...	2	...
Tracheitis...	...	1	...	1	...
105 Asthma ...	...	8	...	8	...
107. Other affections of the Lungs ...	...	2	...	2	...
VI. Diseases of the Digestive System.					
108A. Dental Caries ...	...	19	...	19	...
Pyorrhoea...	...	2	...	2	...
B. Other Affections of the mouth ...	...	69	...	69	...
Stomatitis...	...	1	...	1	...
109. Tonsillitis ...	...	49	...	49	...
Pharyngitis ...	...	5	...	5	...
Quinsy ...	...	2	...	2	...
111a. Ulcer of the Stomach ...	1	6	...	7	...
b. Ulcer of the Duodenum ...	...	3	...	3	...
112. Gastritis ...	1	16	...	17	...
113. Diarrhoea...	...	3	...	3	...
113. Enteritis under 2 years ...	...	12	...	12	...
114. Enteritis over 2 years ...	...	18	...	18	...
Colic ...	...	3	...	3	...
115. Ankylostomiasis ...	...	2	...	2	...
116a. Taenia Solium ...	...	2	...	2	...
117. Appendicitis ...	1	91	1	92	1
118. Hernia ...	...	11	...	11	...
119a. Fistula ...	...	3	...	3	...
122. Cirrhosis of the Liver Biliary Calculus...	...	15	3	15	...
124. Hepatitis ...	1	2	...	3	...
Cholecystitis ...	1	7	...	8	...
126. Peritonitis...	...	1	1	1	...
127. Haematemesis ...	...	2	...	2	...
Other affections of the Digestive system	...	16	1	16	...
VII. Diseases of the Genito-Urinary System.					
128. Acute Nephritis ...	...	9	2	9	...
129. Chronic Nephritis ...	...	1	...	1	...
130B. Schistosomiasis ...	...	6	...	6	...
131. Pyelitis ...	...	21	...	21	...
132. Urinary Calculus...	...	3	...	3	...
133. Cystitis ...	...	14	...	14	...
134a. Stricture of Urethra ...	1	1	...	2	...
135. Hypertrophy ...	...	1	...	1	...
136. Hydrocele...	...	2	...	2	1
Paraphimosis ...	...	1	...	1	...
Carried forward ...	27	1,212	35	1,239	20

TABLE V.—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1937.

ALL EUROPEAN HOSPITALS.

Diseases	Remaining in Hospital at end of 1936	Yearly Total		Total cases Treated	Remaining in Hospital at end of 1937
		Admissions	Deaths		
Brought forward ...	27	1,212	35	1,239	20
VII. Disease of the Genito-Urinary System (*cont.*)					
137. Tumours of the Ovaries	...	1	...	1	...
138. Salpingitis	...	3	...	3	...
Ovarian Cyst	...	1	...	1	...
139. Uterine Tumours	1	...	...	1	...
140. ,, Haemorrhage	...	1	...	1	...
141A. Metritis	...	7	...	7	...
Endometritis	...	1	...	1	...
Dysemenorrhoea	...	11	...	11	...
Menorrhagia	...	4	...	4	...
Displacement of Uterus	...	2	...	2	...
142 Mastitis	...	1	...	1	...
Other affections of Genito-Urinary System	...	15	... ...	15	... ...
VIII. Puerperal State.					
143A. Normal Labour	2	138	...	140	2
Ba. Abortion	1	27	...	28	...
b. Ectopic Gestation	...	5	1	5	...
c. Other Accidents of Pregnancy	...	18	...	18	1
145. Other Accidents of Parturition	...	11	...	11	...
149. Sequelae of Labour	...	2	...	2	...
IX. Affections of the Skin and Cellular Tissues.					
151. Gangrene	...	2	1	2	...
152. Boil	...	8	...	8	1
Carbuncle	...	7	...	7	...
153. Abscess	...	37	...	37	...
Whitlow	...	9	...	9	...
Cellulitis	...	27	...	27	...
155. Other diseases of the skin	...	14	...	14	...
Ulcer	...	1	...	1	...
X. Diseases of the Bones, and Organs of Locomotion (Other than Tuberculosis).					
156. Osteitis	1	3	...	4	1
Osteomyelitis	...	2	...	2	...
157. Arthritis	...	3	...	3	...
Bursitis	...	1	...	1	...
Synovitis	...	4	...	4	...
Myositis	...	1	...	1	...
159. Talipes Equino-Varus	...	4	...	4	1
XI. Malformations.	...	1	...	1	...
XII. Diseases of Infancy.					
162. Malnutrition	...	2	...	2	...
XIII. Affections of Old Age.					
164. Senile Dementia	...	3	...	3	...
Senility	...	4	...	4	...
Carried forward ...	32	1,593	37	1,625	26

TABLE V.—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1937.

ALL EUROPEAN HOSPITALS.

Diseases	Remaining in Hospital at end of 1936	Yearly Total		Total cases Treated	Remaining in Hospital at end of 1937
		Admissions	Deaths		
Brought forward	32	1,593	37	1,625	26
XIV. Affections produced by External Causes.					
165. Suicide by Poisoning	...	1	1	1	...
175. Food Poisoning	...	1	1	1	...
177. Accidental Poisoning	...	1	...	1	...
178. Burns by Fire	...	2	...	2	...
183. Wounds by Firearms	...	3	...	3	...
184. Wounds by Cutting Instruments etc. ...	...	12	...	12	...
185. Wounds by Fall	...	2	...	2	...
188. Wounds by Railway etc.	...	6	1	6	...
189. Injuries inflicted by Animals	...	1	...	1	...
201A. Dislocations	...	7	...	7	...
B. Sprain	...	5	...	5	1
C. Fracture	1	20	...	21	1
202. Other External Injuries	1	35	...	36	3
XVI. Diseases, the total of which have not caused ten Deaths.	...	42	2	42	2
Total	**34**	**1,731**	**42**	**1,765**	**33**

TABLE Va.

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1937.

ALL NATIVE HOSPITALS.

Diseases	Remaining in Hospital at end of 1936	Yearly Total		Total cases treated	Remaining in Hospital at end of 1937
		Admissions	Deaths		
I. Epidemic, Endemic and Infectious Diseases.					
1. Enteric Group ...	...	...	...	...	...
a. Typhoid Fever ...	1	3	3	4	...
3. Relapsing Fever ...	1	52	1	53	2
5e. Malaria ...	28	869	19	897	17
6. Smallpox ...	...	1	...	1	...
Alastrim ...	...	3	...	3	...
7. Measles ...	1	20	1	21	2
9. Whooping Cough...	3	39	2	42	...
11. Influenza ...	...	275	7	275	1
15. Epidemic Diarrhoea ...	...	6	...	6	...
16a. Dysentery-Amoebic ...	4	37	3	41	1
b. ,, -Bacillary ...	...	20	4	20	...
c. ,, -Undefined ...	...	7	2	7	...
17a. Plague Bubonic ...	...	2	...	2	...
20. Leprosy ...	76	108	5	184	79
21. Erysipelas...	...	6	2	6	...
22. Acute Poliomyelitis ...	...	3	...	3	...
24. Cerebro-spinal Fever ...	...	6	4	6	...
25b. Varicella ...	1	109	...	110	2
g. Yaws ...	10	366	...	376	20
h. Trypanosomiasis ...	...	57	8	57	3
27. Anthrax ...	3	5	1	8	...
29. Tetanus ...	...	1	...	1	...
30. Mycosis ...	...	1	...	1	...
31. Tuberculosis-Pulmonary ...	4	60	22	64	2
34. Tuberculosis-Vertebral Column ...	...	7	1	7	...
35. Tuberculosis of Bones and Joints ...	...	4	...	4	1
36c. Tuberculosis-Lymphatic System ...	2	2	...	4	1
38. Syphilis ...	...	...	...	...	...
a. ,, -Primary ...	45	431	...	476	87
b. ,, -Secondary ...	15	347	1	362	8
c. ,, -Tertiary ...	...	86	...	86	9
d. ,, -Hereditary ...	4	41	4	45	7
e. ,, -Period not indicated ...	62	1,429	13	1,491	93
40a. Gonorrhoea and its Complications ...	12	229	...	241	8
c. Gonorrhoeal Arthritis ...	...	6	...	6	...
d. Granuloma Venereum ...	...	3	...	3	...
41. Septicaemia...	...	10	9	10	1
42. Pyaemia ...	1	1	2	2	...
II. General Diseases not mentioned above.					
45. Cancer of Rectum ...	...	1	...	1	1
46. Cancer of Cervix ...	1	1	1	2	...
49. Malignant Tumours ; organs not specified	...	12	2	12	3
50. Tumours ; Non-malignant ...	2	56	1	58	3
51. Acute Rheumatism ...	6	59	3	65	...
52. Chronic Rheumatism ...	4	110	4	114	...
Lumbago ...	...	11	...	11	...
53. Scurvy ...	4	32	1	36	4
54. Pellagra ...	...	4	1	4	...
55. Beri-Beri ...	1	3	...	4	...
56. Rickets ...	...	4	...	4	...
57. Diabetes ...	...	1	...	1	...
Carried forward ...	291	4,946	127	5,237	354

TABLE Va.—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1937.
ALL NATIVE HOSPITALS.

Diseases	Remaining in Hospital at end of 1936	Yearly Total		Total Cases Treated	Remaining in Hospital at end of 1937
		Admissions	Deaths		
Brought forward ...	291	4,946	127	5,237	354
II. General Diseases not mentioned above.—*Ctd.*					
58b. Anaemia ...	...	9	...	9	...
60. Goitre ...	...	6	2	6	1
61. Adenitis ...	...	4	...	4	...
64. Diseases of the Spleen ...	...	9	5	9	1
65. Leukaemia ...	...	1	1	1	...
b. Hodgkins Disease ...	1	5	1	6	...
66. Alcoholism ...	...	1	...	1	...
69. Onyalai ...	...	5	2	5	...
III. Affections of the Nervous System and Organs of the Senses.					
71. Meningitis...	...	5	4	5	...
74. Apoplexy (a) Haemorrhage ...	...	3	2	3	...
,, (c) Thrombosis ...	...	1	1	1	...
75a. Hemiplegia ...	...	2	...	2	...
b. Other Paralyses ...	...	10	...	10	...
77. Other forms of Mental Alienation ...	3	29	1	32	2
78. Epilepsy ...	3	36	2	39	4
80. Infantile Convulsions ...	...	1	1	1	...
82A. Hysteria ...	...	3	...	3	...
B. Neuritis ...	1	21	...	22	1
C. Neurasthenia ...	...	2	...	2	...
83. Cerebral Softening ...	...	1	1	1	...
84. Disseminated Sclerosis ...	...	1	...	1	...
84. Concussion of Brain ...	...	1	...	1	...
85b. Conjunctivitis ...	9	288	...	297	18
c. Trachoma ...	...	8	...	8	...
d. Tumour of Eye ...	...	66	...	66	...
e. Other affections of Eye ...	...	40	1	40	3
86. Affections of the Ear ...	4	64	...	68	2
IV. Affections of the Circulatory System.					
87. Pericarditis ...	2	2	3	4	...
88. Acute Endocarditis ...	...	1	...	1	...
89. Angina Pectoris ...	...	3	...	3	...
90a. Valvular Disease of the Heart ...	...	13	5	13	...
Mitral Disease of the Heart ...	...	2	...	2	...
b. Myocarditis ...	...	8	2	8	...
91a. Aneurism ...	...	1	...	1	...
93. Haemorrhoids ...	...	4	...	4	...
Varicose Veins ...	...	9	1	9	...
Phlebitis ...	...	1	...	1	...
94. Lymphangitis ...	1	2	...	3	3
Lymphadenitis ...	2	29	...	31	...
95. Haemorrhage of Undetermined Cause...	...	7	4	7	...
96. Other affections of the Circulatory System ...	1	7	1	8	1
V. Affections of the Respiratory System.					
97. Adenoids ...	...	2	...	2	...
Rhinitis ...	...	1	...	1	...
Febricula ...	...	107	...	107	2
Coryza ...	5	1	...	6	2
98. Laryngitis ...	...	1	...	1	...
99a. Bronchitis-Acute ...	3	136	1	139	6
b. Bronchitis-Chronic ...	...	21	3	21	1
100. Bronco-Pneumonia ...	2	30	14	32	...
101. Influenzal Pheumonia ...	...	33	10	33	1
Carried forward ...	328	5,989	195	6,317	703

TABLE Va.—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1937.
ALL NATIVE HOSPITALS.

Diseases	Remaining in Hospital at end of 1936	Yearly Total		Total Cases Treated	Remaining in Hospital at end of 1937
		Admissions	Deaths		
Brought forward ...	328	5,989	195	6,317	703
V. Affections of the Respiratory System.—*Cotd.*					
101a. Lobar Pneumonia	3	169	54	172	1
b. Unclassified Pneumonia	13	227	39	240	5
102. Pleurisy	...	38	...	38	...
Empyema	...	2	...	2	...
105. Asthma	...	14	...	14	1
107. Other affections of the Lungs	...	7	...	7	...
VI. Diseases of the Digestive System.					
108A. Dental Caries	...	10	...	10	...
Pyorrhoea	...	1	...	1	...
B. Other affections of the mouth	...	3	...	3	1
Stomatitis	...	16	...	16	1
109. Tonsillitis	...	19	...	19	1
Pharyngitis	...	9	...	9	...
111B. Ulcer of the Duodenum	...	1	...	1	...
112. Gastritis	1	12	1	13	1
113. Diarrhoea	...	9	...	9	...
113. Enteritis under 2 years	2	18	1	20	1
114· Enteritis over 2 years	1	51	10	52	2
Colic	1	4	...	5	...
115. Ankylostomiasis	10	444	1	454	18
116a. Cestoda	...	2	...	2	1
Taenia Solium	1	4	...	5	...
c. Ascaris	1	4	...	5	...
Nematoda—Filariasis	...	4	...	4	...
Other diseases due to Intestinal Parasites	...	32	...	32	...
117. Appendicitis	...	4	...	4	...
118. Hernia	1	43	...	44	...
119A. Fistula	...	5	...	5	...
B. Constipation	...	35	...	35	...
122. Cirrhosis of the Liver-Biliary Calculus	...	13	4	13	...
124. Hepatitis	...	3	...	3	...
Jaundice	...	3	...	3	...
126. Peritonitis	1	5	5	6	...
127. Intestinal Obstruction	...	10	6	10	...
VII. Diseases of the Genito-Urinary System					
128. Acute Nephritis	1	15	4	16	...
129. Chronic Nephritis	...	6	1	6	...
130B. Schistosomiasis	9	317	7	326	14
131. Pyelitis	...	2	...	2	...
132. Urinary Calculus	...	2	...	2	...
133. Cystitis	...	9	...	9	1
134a. Stricture of Urethra	1	6	1	7	...
134b. Urethral Fistula	...	3	...	3	...
135. Hypertrophy	...	1	...	1	...
136. Hydrocele	1	10	...	11	1
Orchitis	...	5	...	5	1
Paraphimosis	...	10	...	10	...
Epididymitis	...	2	...	2	...
138. Salpingitis	...	6	...	6	...
Pelvic Cellulitis	...	3	...	3	...
139. Uterine Tumours	...	4	...	4	1
Carried forward ...	375	7,611	329	7,986	454

TABLE Va.—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1937.
ALL NATIVE HOSPITALS.

Diseases	Remaining in Hospital at end of 1936	Yearly Total		Total Cases Treated	Remaining in Hospital at end of 1937
		Admissions	Deaths		
Brought forward	375	7,611	329	7,986	454
VII. Diseases of the Genito-Urinary System.—*Continued.*					
141A. Metritis	...	1	...	1	...
Dysmenorrhoea	...	17	...	17	...
Displacement of Uterus	...	1	...	1	...
142. Mastitis	1	2	...	3	...
Abscess of Breast	...	7	...	7	...
VIII. Puerperal State.					
143A. Normal Labour	...	100	1	100	1
Ba. Abortion	...	8	...	8	...
c. Other Accidents of Pregnancy	...	13	4	13	...
145. Other Accidents of Parturition	...	19	3	19	...
146. Puerperal Septicaemia	...	2	1	2	...
148. Puerperal Eclampsia	...	1	1	1	...
149. Sequelae of Labour	...	2	...	2	...
150. Puerperal affections of the Breast	...	4	...	4	...
IX. Affections of the Skin and Cellular Tissues.					
151. Gangrene	2	6	1	8	...
152. Boil	6	10	...	16	...
Carbuncle	...	3	...	3	3
153. Abscess	17	263	3	280	19
Whitlow	3	8	...	11	...
Cellulitis	16	188	8	204	16
154B. Scabies	16	614	...	630	13
155. Other Diseases of the Skin	3	207	2	210	17
Tropical Ulcer	25	252	4	177	30
Ulcer	4	82	...	86	11
Elephantiasis	...	9	...	9	...
X. Diseases of the Bones, etc.					
156. Osteitis	...	12	...	12	1
Osteomyelitis	...	9	...	9	4
157. Arthritis	...	14	1	14	1
Bursitis	...	2	...	2	...
Synovitis	...	31	1	31	2
Myositis	...	30	...	30	...
158. Other diseases of the Bones etc.	...	28	...	28	1
159. Spina Bifida	...	1	...	1	...
XI. Malformations.	...	3	...	3	...
XII. Diseases of Infancy.					
160. Congenital Debility	...	9	3	9	...
161. Premature Birth	...	6	4	6	...
162. Mulnutrition	...	2	2	2	...
Marasmus	...	4	2	4	...
XIII. Affections of Old Age.					
Debility	2	2	...	4	...
Senility	2	7	5	9	...
XIV. Affections produced by External Causes.					
168. Suicide by Strangulation	...	1	1	1	...
175. Food Poisoning	...	4	...	4	...
Carried forward ...	472	9,595	376	10,067	573

TABLE Va.—*continued.*

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1937.

ALL NATIVE HOSPITALS.

Diseases	Remaining in Hospital at end of 1936	Yearly Total		Total Cases Treated	Remaining in Hospital at end of 1937
		Admissions	Deaths		
Brought forward ...	472	9,595	376	10,067	573
XIV. Affections produced by External Causes.—*Continued*					
176. Snake Bite	1	45	...	46	1
Pyemia	...	6	2	6	1
177. Accidental Poisoning	...	14	4	14	...
178. Burns by Fire	16	153	6	169	13
179. Burns other than by Fire	...	5	...	5	...
183. Wounds by Firearms	1	6	1	7	1
184. Wounds by Cutting Instruments etc. ...	4	144	2	148	6
185. Wounds by Fall	5	73	...	78	7
186. Wounds in Mines	...	323	2	323	14
187. Wounds by Machinery	29	236	2	265	12
188. Wounds by Railway etc.	...	10	1	10	...
189. Injuries inflicted by Animals	4	26	2	30	3
196. Electric Shock	...	3	...	3	...
199. Murder	...	1	1	1	...
201A. Dislocation	...	23	...	23	...
B. Sprain	...	13	...	13	1
C. Fracture	15	126	1	141	10
202. Other External Injuries	30	333	3	363	6
XV. Ill-defined Diseases.					
205A. Ascites	1	11	5	12	...
Asthenia	...	4	1	4	...
B. Malingering	...	14	...	14	...
XVI. Diseases the total of which have not caused 10 deaths	...	180	6	180	7
Totals	578	11,344	415	11,922	657

APPENDIX I.

RHODESIA BROKEN HILL DEVELOPMENT COMPANY, LIMITED, BROKEN HILL.

Natives :

Daily Average employed	2,335
Total Admissions to Hospital	1,048
Total Deaths (including accidents)	33
Mortality per mille employed	14.12

Accidents :

Total Major	22
Total Major Deaths	7
Total Minor	301

RHOKANA CORPORATION LIMITED.—NKANA MINE.

Natives :—Mine and Contractors employees :

Daily Average employed	7,359
Total Admissions to Hospital	4,527
Total Deaths (including accidents)	74
Mortality per mille employed	10.05

Accidents :

Total Cases	1,957
Total Deaths	21

ROAN ANTELOPE COPPER MINE.—LUANSHYA.

Natives :—Mine and Contractors employees :

Daily Average employed	6,743
Total Admissions to Hospital	3,418
Total Deaths (including accidents)	55
Mortality per mille employed	10.60

Accidents :

Total Major	148
Total Major Deaths	13
Total Minor	800

MUFULIRA COPPER MINE.—MUFULIRA.

Natives :—Mine and Contractors employees :

Daily Average employed	5,103
Total Admissions to Hospital	2,381
Total Deaths (including accidents)	56
Mortality per mille employed	18.95

Accidents :

Total Major	41
Total Major Deaths	8
Total Minor	1,008